SERUM FLUORIDE LEVEL OF CHILDREN IN OMKOI DISTRICT, CHIANG MAI PROVINCE, THAILAND

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SUMMARY: *Background:* The serum fluoride (F) level can be used as both an indicator of F intake into the body and as a biomarker for the assessment, control, and prevention of fluorosis in particular areas. No reports have published on the reference values for serum F in children in Chiang Mai province, Thailand. Fluorosis in children is found in areas where the water is contaminated with fluoride. The Omkoi district, Chiang Mai province, is not in the fluoride lode area and the children there are not affected by fluorosis. *Objective:* The aim of the present study was to investigate the serum F level of children, aged 8–14 years, living in the Omkoi district, Chiang Mai province, in order to provide a normal reference interval or range for the serum F for children living in a non-fluorosis area. *Methods:* Fasting blood samples were collected from 264 children who had fasted for 8 hours and the serum F levels were measured usinga F ion selective electrode (Orion). The reference interval was calculated using three methods of statistical analysis. *Results:* The results showed that the reference interval calculated by mean±2SD was 0.000–0.084 mg/L. When the data was calculated using a non-parametric method, the reference interval was 0.015–0.117 mg/L. Finally, by using logarithmic conversion, the reference interval for the serum F was found to be 0.011–0.112 mg/L. *Conclusion:* It was concluded that the control values or normal reference intervals for the serum F for children living in the non-fluorosis area in Omkoi district, Chiang Mai province, were 0.000–0.084mg/L, 0.015–0.117mg/L, and 0.011–0.112 mg/L when calculated by the methods of mean±2SD, a non-parametric method, and logarithmic conversion, respectively.

Keywords: Fluorosis; Omkoi district, Chiang Mai province, Thailand; Reference values; Serum fluoride.

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